

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A heat rod assembly for a pre-heater used in a vehicle, the heat rod assembly comprising:
 - a channel type lower heat rod ~~110~~;
 - an insulator installed at a bottom portion of the lower heat rod ~~110~~;
 - a positive terminal ~~130~~ fixedly installed on the insulator ~~120~~ lengthwise along the insulator ~~120~~;
 - a PTC device ~~140~~ coupled to the insulator ~~120~~ by interposing the positive terminal ~~130~~ therebetween; and
 - an upper heat rod ~~150~~ for covering an opening section of the lower heat rod ~~110~~.
2. (Currently amended) The heat rod assembly as claimed in claim 1, wherein an upper edge section of the lower heat rod ~~110~~ is inwardly bent such that the upper edge section covers an edge section of the upper heat rod ~~150~~.
3. (Currently amended) The heat rod assembly as claimed in claim 2, wherein an inner width of the lower heat rod ~~110~~ is identical to an outer width of the insulator ~~120~~.
4. (Currently amended) The heat rod assembly as claimed in claim 1, wherein the insulator

~~120~~ is formed with a bottom recess, which extends lengthwise along the insulator ~~120~~ in order to receive the positive terminal ~~130~~ therein.

5. (Currently amended) The heat rod assembly as claimed in claim 4, wherein the insulator ~~120~~ is provided at both longitudinal ends thereof with fixing protrusions ~~123~~, which are inserted into coupling holes formed in the positive terminal ~~130~~.

6. (Currently amended) The heat rod assembly as claimed in claim 5, wherein stepped recesses ~~124~~ are formed at both sides of the bottom recess ~~125~~ of the insulator ~~120~~, insertion protrusions ~~122~~ are formed in the stepped recesses ~~124~~, and a distance between the insertion protrusions ~~122~~ is identical to a length of the PTC device ~~140~~.

7. (Currently amended) The heat rod assembly as claimed in claim 1, wherein the PTC device ~~140~~ is positioned on the insulator ~~120~~ corresponding to openings ~~121~~ formed in the insulator ~~120~~ by interposing the positive terminal ~~130~~ between the PTC device ~~140~~ and the insulator ~~120~~.

8. (Currently amended) A pre-heater for a vehicle, the pre-heater comprising :
a heat rod assembly ~~100~~ described in claim 1 ~~any one of claims 1 to 7~~;
a heat pin assembly ~~200~~ formed at both sides of the heat rod assembly ~~100~~ in parallel to each other; a negative terminal ~~300~~ aligned in parallel to the heat pin assembly ~~200~~;

side frames ~~600 and 900~~ coupled to both sides of a coupling structure consisting of the heat rod assembly ~~100~~, the heat pin assembly ~~200~~ and the negative terminal ~~300~~; and

housings ~~400 and 800~~ for coupling the heat rod assembly ~~100~~, the heat pin assembly ~~200~~, the negative terminal ~~300~~, and the frames ~~600 and 900~~ with each other at front and rear portions thereof.

9. (Currently amended) The pre-heater as claimed in claim 8, further comprising a coupling unit ~~500~~ laterally provided over middle parts of the heat rod assembly ~~100~~, the heat pin assembly ~~200~~ and the negative terminal ~~300~~ in order to couple the heat rod assembly ~~100~~, the heat pin assembly ~~200~~ and the negative terminal ~~300~~ with each other.

10. (Currently amended) The pre-heater as claimed in claim 9, wherein the coupling unit ~~500~~ includes a clip capable of coupling the heat rod assembly ~~100~~, the heat pin assembly ~~200~~ and the negative terminal ~~300~~ with the side frames ~~600 and 900~~.

11. (Currently amended) The pre-heater as claimed in claim 10, wherein the side frames ~~600 and 900~~ have a channel structure, both ends of the clip are bent such that the both ends of the clip are locked with flanges formed in upper portions of the side frames ~~600 and 900~~, and the housings ~~400 and 800~~ have coupling slots ~~450 and 850~~, respectively, for receiving end portions of the side frames ~~600 and 900~~.

12. (Currently amended) The pre-heater as claimed in claim 8, wherein the heat pin assembly 200 includes a plurality of corrugate pins ~~210~~, which are fixedly arranged lengthwise along a pin plate ~~220~~.

13. (Currently amended) The pre-heater as claimed in claim 8, wherein the heat pin assembly ~~200~~ is coupled with the side frames ~~600 and 900~~ by interposing a pin protecting plate ~~700~~ therebetween.